

RECEIVED
CENTRAL FAX CENTER DORSEY

FEB 27 2004

FAX COVER SHEET

OFFICIAL

The information contained in this facsimile message, if a client of this firm is a named addressee, or the message is otherwise intended for a client, is presumptively legally privileged and confidential information. If you are not a named addressee, or if there is any reason to believe that you may have received this message in error, (1) do not read the message below; (2) do not distribute or copy this facsimile; and (3) please immediately call us collect at the number of the sender below.

DATE: February 27, 2004

TOTAL # OF PAGES:
(INCLUDING THIS COVER SHEET) 6

TO: Commissioner for Patents

FAX #: (703) 872-9306

FIRM NAME: Examiner: Elizabeth S. Quan
Art Unit: 1743

PHONE #: (571) 272-1261

FROM: Victor E. Johnson

FAX #: (415) 398-3249

PHONE #: (415) 781-1989

EMAIL: johnson.victor@dorsey.com

RE:

U.S. Patent Application No. 09/881,052 for
Oligonucleotide Synthesizer
Our Docket No. A-68717-2/RMS/VEJ (Matter No. 469249-00078)

COMMENTS:

Kindly acknowledge receipt of the following documents by return facsimile:

- 1) REQUEST FOR RECONSIDERATION AND RESETTING REPLY PERIOD;
- 2) Copy of first two pages of U.S. Patent No. 6,663,832;
- 3) Copy of Information Disclosure Statement received by the USPTO on May 18, 2001 and signed by Examiner on October 27, 2002; and
- 4) One facsimile cover sheet.

ORIGINAL WILL BE SENT VIA: ☐ MAIL ☐ E-MAIL ☐ MESSENGER ☐ AIR COURIER ☒ WILL NOT BE SENT

PLEASE CONTACT PATRICIA A. DIEHL AT (415) 781-1989 IF THIS TRANSMISSION IS INCOMPLETE OR CANNOT BE READ.

REFERENCE # 469249-00078

PATENT

Attorney Docket No. A-68717-2/RMS/VEJ
Attorney Matter No. 469249-00078
Application No. 09/881,052

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

RECEIVED
CENTRAL FAX CENTER

FEB 27 2004

OFFICIAL

In re application of:

Michal Lebl *et al.*

Application No. 09/881,052

Filed: June 13, 2001

For: OLIGONUCLEOTIDE
SYNTHESIZER

Art Unit: 1743

Examiner: Elizabeth S. Quan

Docket No.: A-68717-2/RMS/VEJ

*Certificate of Transmission (37 C.F.R. § 1.8(g))**I hereby certify that this correspondence is being facsimile transmitted to the U.S. Patent and Trademark Office, Facsimile number (703) 872-9306 on 2/27/2004**Victor E. Johnson*

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

REQUEST FOR RECONSIDERATION
AND RESETTING REPLY PERIOD

Sir:

Applicants respectfully request that the Examiner reconsider all references listed on the Information Disclosure Statement filed June 13, 2001 ("the '01 IDS"). Applicants further request that the Examiner reset the outstanding reply period in accordance with M.P.E.P. § 710.06.

In the Office Action of February 5, 2004, the Examiner stated that the '01 IDS has been placed in the application file, but the information referred to therein has not been considered. A copy of the '01 IDS was attached to the Office Action but the Examiner did not initial the foreign patent or the non patent literature documents. Instead, the Examiner indicated that these documents were "not provided".

Applicants respectfully submit that, in accordance with 37 C.F.R. § 1.98(d), copies of the above-mentioned documents need not be provided because copies thereof were submitted to, or cited by, the USPTO during prosecution of an earlier application which was relied upon by this application under 35 U.S.C. § 120. Specifically, copies of the above-mentioned documents were

REQUEST FOR RECONSIDERATION
AND RESETTING REPLY PERIOD

- 1 -

(1133314)

PATENT

Attorney Docket No. A-68717-2/RMS/VEJ
Attorney Matter No. 469249-00078
Application No. 09/881,052

submitted to the USPTO during prosecution of parent application no. 09/738,473 ("the '473 application").

Attached hereto is a copy of the first two pages of U.S. Patent No. 6,663,832 evidencing that each of the above-mentioned documents, with the exception of Japanese Patent No. 61-139756, was submitted to, or cited by, the USPTO during prosecution of the earlier application. Applicants respectfully submit that the Japanese patent was also submitted to the USPTO and considered by the Examiner during prosecution of the '473 application as is evidenced by the copy of the attached Information Disclosure Statement received by the USPTO on May 18, 2001 and signed by Examiner on October 27, 2002.

Accordingly, Applicants respectfully request the Examiner to consider the above-mentioned documents in accordance with 37 C.F.R. § 1.98. As the present request is brought to the Examiner's attention within one month after the date of the Office Action, Applicants respectfully request the Examiner to restart the period for reply in accordance with M.P.E.P. § 710.06.

Applicants believe that no fee is required in connection with this communication. Nonetheless, the Commissioner is hereby authorized to charge any underpayment of fees associated with this communication, including any necessary fees for extension of time and for the presentation of extra claims, or credit any overpayment to Deposit Account No. 50-2319 (Order No. 469249-00078; Docket No. A-68717-2/RMS/VEJ).

Respectfully submitted,

DORSEY & WHITNEY LLP

Date: 2/27/2004

By: Victor E. Johnson

Victor E. Johnson, Reg. No. 41,546
/for/ Robin M. Silva, Reg. No. 38,304
Filed under 37 C.F.R. § 1.34(a)

DORSEY & WHITNEY LLP
Four Embarcadero Center, Suite 3400
San Francisco, CA 94111-4187
Telephone: (415) 781-1989 Facsimile: (415) 398-3249

REQUEST FOR RECONSIDERATION
AND RESETTING REPLY PERIOD

- 2 -

(1133314)



US006663832B2

(12) **United States Patent**
Lebl et al.

(10) Patent No.: **US 6,663,832 B2**
(45) Date of Patent: **Dec. 16, 2003**

(54) OLIGONUCLEOTIDE SYNTHESIZER

(75) Inventors: Michal Lebl, San Diego, CA (US);
Mark S. Chec, Del Mar, CA (US);
Steven M. Barnard, San Diego, CA
(US); David L. Helner, San Diego, CA
(US); Vit Pokorny, Praha (CS); Mark
J. Nibbe, Santee, CA (US); Aaron
Christopher Jones, San Diego, CA
(US)

(73) Assignee: Illumina, Inc., San Diego, CA (US)

(*) Notice: Subject to any disclaimer, the term of this
patent is extended or adjusted under 35
U.S.C. 154(b) by 0 days.

(21) Appl. No.: 09/738,473

(22) Filed: Dec. 13, 2000

(65) Prior Publication Data

US 2002/0028159 A1 Mar. 7, 2002

Related U.S. Application Data

(60) Provisional application No. 60/170,314, filed on Dec. 13,
1999.

(51) Int. Cl.⁷ G01N 21/00

(52) U.S. Cl. 422/64; 422/99; 422/100;
422/63; 422/67; 436/43; 436/47; 436/45;
436/180; 73/863.45

(58) Field of Search 422/64, 100, 67;
436/45, 180, 44, 46-48; 73/863.01, 863.44,
864.31; 494/17

(56) References Cited

U.S. PATENT DOCUMENTS

3,586,484 A 6/1971 Anderson
3,712,535 A 1/1973 Genese et al.

(List continued on next page.)

FOREIGN PATENT DOCUMENTS

EP	0445915 A1	9/1991
EP	0569115 A3	11/1992
FR	2156519	6/1973
GB	1241539	8/1971
WO	90/05590	5/1990
WO	93/10455	5/1993
WO	99/09394 A1	2/1999
WO	99/25470	5/1999
WO	99/34931 A1	7/1999
WO	00/44491 A3	8/2000

OTHER PUBLICATIONS

Lebl, M. "New Technique for High-Throughput Synthesis,"
Bioorganic & Medicinal Chemistry Letters, 9:1305-1310
(1999).

(List continued on next page.)

Primary Examiner—Jill Warden

Assistant Examiner—Elizabeth Quan

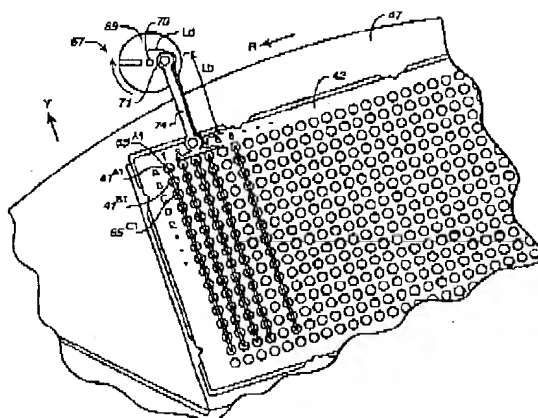
(74) Attorney, Agent, or Firm—Dorsey & Whitney LLP

(57)

ABSTRACT

An apparatus for high-throughput combinatorial syntheses of organic molecules including a reaction vessel for containing a combinatorial-chemistry synthetic reaction, a liquid dispenser for dispensing the liquid, a liquid aspirator and an adjustment mechanism. The reaction vessel includes an ingress aperture allowing a liquid to enter into an interior of the vessel and an egress aperture for aspirating the liquid from the vessel. The liquid dispenser dispenses liquid through the ingress aperture. The liquid aspirator aspirates liquid through the egress aperture and includes a rotor for carrying the vessel and orbiting the vessel about an axis of rotation. The rotor is oriented generally in a horizontal plane and includes an adjustment mechanism for adjusting the angle of the vessel relative to the horizontal plane in response to the centrifugal force generated by orbiting the vessel about the axis of rotation. A method of combinatorial synthesis of organic molecules is also disclosed.

18 Claims, 12 Drawing Sheets



US 6,663,832 B2

Page 2

U.S. PATENT DOCUMENTS

4,244,694 A	1/1981	Farina et al.	
4,287,154 A *	9/1981	Sommers	422/64
4,412,973 A *	11/1983	Guigan	422/72
4,808,380 A *	2/1989	Minckane	422/64
4,844,868 A *	7/1989	Rokugawa	422/64
4,862,932 A *	9/1989	Feinstein et al.	141/130
4,906,433 A *	3/1990	Minckane	422/64
5,084,242 A *	1/1992	Sakuma et al.	422/100
5,089,417 A	2/1992	Wogomon	
5,202,418 A	4/1993	Lebl et al.	
5,338,831 A	8/1994	Lebl et al.	
5,342,585 A	8/1994	Lebl et al.	
5,434,083 A *	7/1995	Mitsumaki et al.	436/48
5,501,984 A *	3/1996	Hofstetter et al.	436/518
5,585,068 A *	12/1996	Pancrz et al.	422/64
5,660,988 A	8/1997	Duck et al.	
5,705,062 A *	1/1998	Knobel	210/205
6,045,755 A	4/2000	Lebl et al.	

6,121,054 A	9/2000	Lebl	
6,357,907 B1 *	3/2002	Cleveland et al.	366/273
6,375,898 B1 *	4/2002	Ulrich	422/64

OTHER PUBLICATIONS

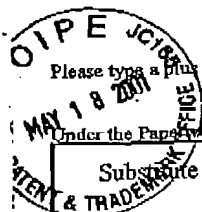
Lebl, M., "A new Approach to Automated Solid Phase Synthesis Based on Centrifugation of Tilted Plates," Journal of the Association for Laboratory Automation, 3(3): 59-61 (1998).

Menotti et al., "Facile Manual Synthesis of Peptide Libraries," Protein and Peptide Letters, 1(3): 187-192 (1994).

Foust et al., "Principles of Unit Operations," John Wiley & Sons, New York, 628 (1980).

Birt, C., Aspects of the Merrifield Peptide Synthesis, Springer-Verlag, New York, entire book, 101 pages (1978).

* cited by examiner

Please type a plus sign (+) inside this box ☐

PTO/SB/8A (08-00)

Approved for use through 10/31/2002. OMB 0651-00

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/PTO

**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**

(use as many sheets as necessary)

Sheet 1 of 1

Complete if Known

Application Number	09/738,473
Filing Date	December 13, 2000
First Named Inventor	Michal Lebl et al.
Group Art Unit	1743
Examiner Name	To be assigned
Attorney Docket Number	A-68717-1/DJB/RMS/VEJ

U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number	Kind Code ² (if known)			
EJ JQ	A	4,244,694		FARINA et al.	01/13/1981	
	B	3,712,535		GENESE et al.	01/23/1973	
	C					
	D					
	E					
	F					
	G					
	H					
	I					
	J					
	K					
	L					
	M					
	N					

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No. ¹	Foreign Patent Document			Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T ³
		Office ³	Number ⁴	Kind Code ² (if known)				
EJ	O	JP	61-139756		DAINIPPON PHARMACEUT	06/27/1986		X
	P							
	Q							
	R							
	S							
	T							

OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ³
	U		
	V		

Examiner Signature	<i>Olga L. Ivanov</i>	Date Considered	10/27/2002
--------------------	-----------------------	-----------------	------------

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Unique citation designation number. ² See attached Kinds of U.S. Patent Documents. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶ Applicant is to place a check mark here if English Language Translation is attached.

Burden Hour Statement: This form is estimated to take 2.0 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.

(1051610)